

1950 - 1956

REEL

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ARSEN'YEV, A.A., kand.geologo-mineral.nauk, otv.red.; ASKASINSKIY, V.V., inzh.-geolog, red.; LEYTES, A.M., inzh.-geolog, red.; POPOV, S.D., doktor geologo-mineral.nauk, red.; Sostaviteli kart: LAPEKIN, S.I.; SULERZHITSKIY, L.D.. GALUSHKO, Ya.A., red.izd-va; ASTAF'YEVA, G.A., tekhn.red.

[Mineral deposits in Chita Province; ferrous and nonferrous metal deposits] Poleznye iskopaemye Chitinskoi oblasti; chernye metally i nemetallicheskie poleznye iskopaemye. Moskva, 1959. 141 p.

(MIRA 13:2)

1. Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh sil. 2. Institut geologicheskikh nauk AN SSSR (for Lapekin, Sulerzhitskiy).

(Chita Province--Ore deposits)

ASKENAZI, YE. L.; MESHCHERYAKOV, V. N.

Holder for mass production operations on model 116 turret lathe, Stan. 1 instr.,
23, No. 5, 1952.

SO: MLRA. November 1952.

ASKENAZY, L.

"Betatron."

p. 4 (Ceskoslovensky Vojak) Vol. 7, no. 1, Jani 1958
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,
April 1958

ASKENLARYAN, T. S.

PROCESSES AND PROPERTIES INDEX

The influence of the type of heating on the decarbonization and grain size of tools of high-speed steel. T. Sh. Askenlaryan and A. S. Berezinskaya. *Kuchestvennyye Svoystva* 1935, No. 9, 48-51; *Chem. Zvest.* 1935, II, 3572.

Expts. are reported on the decarbonization of tools of high-speed steel of the compn.: C 0.7, W 18, Cr 4.5 and V 1%. The ordinary addn. of powd. 45% ferrosilicon to the BaCl₂ bath eliminates the decarbonization. Hardening of the tools in a 600° KNO₃ bath produces a less deep decarbonized layer than quenching in oil. The grain size of the steel stands in definite relation to the depth of the decarbonized layer. W. A. Moore

ASH-114 METALLURGICAL LITERATURE CLASSIFICATION

ASKENDARYAN, T.Sh, inzhener; REHTSINSKAYA, A.S., inzhener.

Relationship between slag microstructure and steel desulphurization.
Stal' 16 no.1:22-29 '56. (MLRA 9:5)

1. Kazakhskiy metallurgicheskiy zavod.
(Slag) (Steel--Metallurgy)

SOV/137-58-9-18583

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 59 (USSR)

AUTHORS: Bertsinskaya, A.S., Askendaryan, T.Sh.

TITLE: Manganese Losses ~~During~~ Deoxidation of Rimmed Steel (Obugare margantsa pri raskislenii kipyashchey stali)

PERIODICAL: V sb.: Staleplavil'n. proiz-vo. Moscow, Metallurgizdat, 1958, pp 63-74

ABSTRACT: A number of definite relationships were established during deoxidation of rimmed steel 3 kp and steels St. 5 and St. 6 in the furnace, as well as in the furnace and in the ladle. The steels were smelted in the 70-ton open-hearth furnaces of the Kazakh plant (the furnaces, which operate with a scrap-smelting process with low-manganese cast iron containing 0.3-0.6% Mn, are fired with fuel oil and are equipped with magnesite-chromite crowns). The losses of Mn which is introduced together with the deoxidizing agent, become greater as the Mn content of the molten metal is increased. In the process of deoxidation of the 3-kp steel, the Mn losses are affected by C only if the content of the latter is greater than 0.15% prior to the deoxidation. The alkalinity of the slag, within the limits of

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SOV/137-58-9-18583

Manganese Losses During Deoxidation of Rimmed Steel

2.2-2.6, does not affect the Mn losses; however, the effect of the slag composition becomes apparent when prior to the deoxidation "spider webs" or "grayness" appear on the surface of the slag cake (the former appears when the MnO/FeO ratio is < 0.4 , and the latter, when the ratio is ≥ 0.8). Mn losses may be greatly diminished if localized concentrations of Mn are reduced by means of spreading the deoxidizer throughout the entire surface of the pool of molten metal, as well as by means of uniform distribution of Mn contents in the deoxidizing agent itself.

L.K.

1. Steel--Processing 2. Manganese--Chemical reactions 3. Open hearth furnaces
--Performance

Card 2/2

ASKENOV, V.A.; BRODKIN, E.B.; BUSHUYEV, A.V.; POLIKARPOV, V.I.

Gamma radiation from Cs¹³⁹. Atom. energ. 13 no.3:271-274 S '62.
(MIRA 15:9)

(Cesium--Isotopes)

(Gamma rays)

ASKERBEYLI, E.K.

Real conditions governing the development of the Dzerzhinsk karst region in Gorky Province. Dokl. AN Azerb. SSR 21 no. 1148-51 '65.

(MIRA 18:7)

1. Karstovaya stantsiya, g. Dzerzhinsk.

ASKEFKHANOV, R.P.

Method of blood transfusion and administration of medicinal substances into porous bones. Klin. med., Moskva 30 no. 6:61-63 June 1952.
(CLML 22:5)

1. Candidate Medical Sciences. 2. Of the Department of Hospital Surgery (Head -- Honored Worker in Science Dagestan ASSR Prof. S. I. Rivash), Dagestan Medical Institute, and of the Department of Roentgenology (Head -- Prof. D. S. Lindenbraten), State Order of Lenin Institute for the Advanced Training of Physicians imeni S. M. Kirov .

ASKERKHANOV, R. P.

Etiology and pathogenesis of varicose veins of the lower extremities.
Khirurgiya, Moskva no.4:76-80 Apr 1953. (CML 24:4)

1. Candidate Medical Sciences. 2. Of the Central Roentgenological
Radiological and Cancer Institute (Director -- Prof. M. N. Pobedinskiy)
and of the Hospital Surgical Clinic (Director -- Prof. S. I. Rizvash)
of Dagestan Medical Institute.

ASKERKHANOV, R. P.

USSR/Medicine - Roentgenology

FD 208

Card 1/1

Author : Askerkhanov, R. P., Candidate Medical Sciences

Title : Experimental data on contrast venography of the lower extremities

Periodical : Vest. Rent. i Rad. 6-12, Mar/Apr, 1954

Abstract : Worked out criteria for the clinical appraisal of contrast venographs. Presents data on the comparative characteristics of the X-rays of veins in normal humans and those having varicose veins and thrombophlebitis. Nine references; all USSR. Two tables; six photographs (X-rays).

Institution : Surgical Clinic, Central Roentgenological, Radiological, and Cancer Institute (Director - Professor M. N. Pobedinskiy), and Chair of Roentgenology and Radiology (Chief - Professor M. N. Pobedinskiy) Leningrad Institute for Advanced Training of Physicians (Director - Professor M. N. Mishchuk).

ASKERKhanov, Rashid Pashayevich

(Dagestan State Medical Inst) - Academic degree of Doctor of Medical Sciences, based on his defense, 27 May 1955, in the Council of the State Order of Lenin Inst for Advanced Training of Physicians imeni Kirov, of his dissertation entitled: "Contrast Veinography of the Lower Extremities in Varicose Swelling of the Veins."

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no. 25, 10 Dec 55, Byulleten' MVO SSSR, Uncl. JFRS/NY 548

ASKIRKHOV, R.P., dotsent (Makhachkala)

Treatment of certain diseases of the lower extremities by intra-
osseous injections of novocaine, novocaine-penicillin, and
plasma-novocaine-penicillin solutions. Ortop.travm.protez, Moskva
no.1:87 Ja-F '55. (MLRA 8:10)

(LEG, diseases,

ther.procaine, alone & with penicillin & plasma, intra-
osseous admin.)

(PROCAINE, therapeutic use,

leg dis.,alone & with penicillin & plasma, intraosseous
admin.)

(PENICILLIN, therapeutic use

leg dis.,with procaine & plasma, intraosseous admin.)

(BLOOD TRANSFUSION, in various diseases,

leg dis.,with procaine & penicillin, intraosseous)

ASKERKHANDOV, R.P.

ASKERKHANDOV, R.P., dotsent

Volvulus of the caecum following gastroenterostomy in abnormal position of the intestines. Khirurgia no.7:82-83 J1 '55.
(MLRA 8:12)

1. Iz gosptal'noy khirurgicheskoy kliniki (zav.-prof. S.N.R Rizvash) Dagestanskogo meditsinskogo instituta.
(INTESTINES--OBSTRUCTION)

USSR/General Problems of Pathology - Tumors. Comparative
Oncology. Human Neoplasms.

U.

Abs Jour : Ref Zhur - Biol., No 19, 1958, 89607

Author : Askerkhanov, R.P.

Inst :

Title : Carcinoma of the Oesophagus in an Adolescent.

Orig Pub : Vopr. Onkologii, 1957, 3, No 6, 743-744.

Abstract : Carcinoma of the oesophagus was diagnosed in 16-year-old adolescent complaining of difficulty and pain on swallowing. Biopsy established the presence of a erato-tic plancellular carcinoma. Neoplastic infiltration extending for about 10 cm was discovered at operation. Removal of the tumor was unsuccessful and the patient died. At autopsy, a spread of the growth to the surrounding connective tissue, to the aorta, to the lungs and to the lymph nodes was discovered.

Card 1/1

EXCERPTA MEDICA Sec.9 Vol.12/5 Surgery May 1958

ASKERKHANOV, R.P.

3070. EVALUATION OF THE METHODS OF VENOGRAPHY OF THE VARICOSE VEINS OF THE LOWER EXTREMITIES BY SERGOSIN (Russian text) - Askerkhanov R. P. - KHIRURGIYA 1957, 6 (97-101) illus. 2

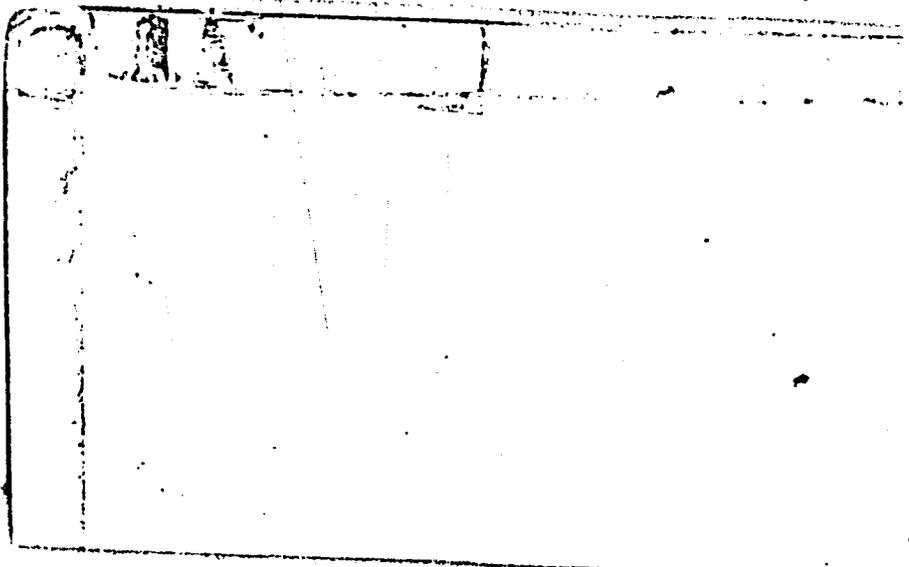
Experimental and clinical investigations with sergosin, a Soviet preparation, showed that it fulfils the requirements of a good contrast medium for X-ray examination, but is not indifferent to the blood vessels, bone marrow and internal organs. If residual sergosin is present in the vessels after direct venography, thrombosis of varicose veins results in less than 24 hr. As the method of choice 70-80 ml. of 30% sergosin solution should be used; if prepared with blood plasma and administered through the calcaneus, it causes only slight irritation. However, in patients with complicated varices exacerbations of previous symptoms may occur (phlebitis, periphlebitis).

Zakryś - Lublin (IX, 14*)

EXCERPTA MEDICA Sec 9 Vol 13/7 Surgery July 59

3916. A NEW MODIFICATION OF ABDOMINAL WALL PLASTY IN DIASTASIS OF RECTUS ABDOMINIS BY CREATION OF REINFORCED COMPLETE APONEUROTIC MUSCULAR BANDAGE (Russian text) - Askerkhanov R. P. - KHIRURGIYA 1958, 7 (63-68) Illus. 9

In this technique the posterior aponeurotic layer of the abdominal wall is reinforced by doubling it with the medial halves of the anterior lamella of the sheath, and by moving the recti abdominis to the median line in front of the linea alba. The method was used in 10 cases with good results, controlled after 1-3 yr.



ASIERKHANOV, R.P., prof.

Use of glucose in stimulating osteogenesis following
osteosynthesis of fractures of long bones. Ortop.travm. i
protez. 9 no.4:65 J1-Ag '58 (MIRA 11:11)

1. Iz kafedry obshchey khirurgii (zav. - prof. R.P. Askerkhanov)
Dagestanskogo meditsinskogo instituta.
(GLUCOSE)
(FRACTURES)

ASKERKHANOV, R.P., prof.

Periostitis and osteoperiostitis of leg bones in the case of varicose veins [with summary in English]. Vest.rentg. i rad. 33 no.1:36-42
Ja-F '58. (MIRA 11:4)

1. Iz kafedry obshohey khirurgii (zav.-prof. R.P. Askerkhanov)
Dagestanskogo meditsinskogo instituta.
(VARICOSE VEINS, pathol.
periostitis & osteoperiostitis of shank bones (Rus)
(PERIOSTITIS, etiol. & pathogen.
varicose veins causing periostitis & osteoperiostitis of
shank bones (Rus)

ASKERKHANOV, R.P., prof.

New method of abdominal wall plastic surgery in diastasis of the
rectus abdominis muscle; creation of a myoneurotic-muscular band
(MIRA 11:9)

1. Iz osnovnykh voprosov khirurgii (zav. - zasluzhennyy deyatel'
Dagestanskogo gosudarstvennogo meditsinskogo instituta).
(ABDOMINAL WALL, diastasis)

Diastasis of rectus abdominis, correction with
new plastic surgical technique (rus).

ASKERKHANOV, R.P., prof.

Cases of malignant degeneration of the wall of a pulmonary hydatid
cyst (MIRA 12:2)

1. Iz kliniki fakul'tetskoy khirurgii (zav. - zasluzhennyy deyatel'
Dagestanskoy ASSR prof. R.P. Askerkhanov) Dagestanskogo medi-
tsinskogo instituta.

(LUNG DISEASES, pathol.
echinococcosis, malignant degen. (Rus))

(ECHINOCOCCOSIS, pathol.
lung, malignant degen. (Rus))

(LUNG NEOPLASMS, case reports,
malignant degen. of hydatid cyst. (Rus))

ASKERKHANOV, Rashid Pashayevich, zaasl. deyatel' nauki Dagestanskoy
Avtanomnoy SSR, prof.; DALGAT, Dalgat Manafovich; MAKSULOV,
Magomed Magomedovich; MAKHACHEV, Malik Osmanovich; TSAKHAYEV,
Nabi TSakhayevich; SHAKHSHAYEV, P., tekhn. red.

[Essays on the history of surgery in Daghestan] Ocherki po
istorii khirurgii v Dage. me. Makhachkala, Dagestanskoe
izd-vo, 1960. 215 p. (MIRA 15:9)

(DAGHESTAN--SURGERY)

ASKERKhanov, R.P.

Pericardial cysts and their treatment. Grud. khir. 2 no.3:108-109
My-Je '60. (MIRA 15:3)

1. Iz toraka'nogo otdeleniya kliniki fakul'tetskoy khirurgii
(zav. - zasluzhennyy deyatel' nauki Dagestanskoy ASSR prof. R.P.
Askerkhanov) Dagistanskogo meditsinskogo instituta.
(PERICARDIUM---TUMORS)

ASKIRKAHANOV, R.P.

Echinococcosis of the lungs and its surgical treatment.
Khirurgia 36 no.1:31-37 Ja '60. (MIRA 13:10)
(LUNGS--HYDATIDS)

ASKERKhanov, R.P. (Makhachkala, Sovetskaya ul., d.9, kv.8)

Pulmonary echinococcus and its surgical treatment. Grud.
khir. 1 no.5:54-58 S-0 '61. (MIRA 15:3)

1. Zaveduyushchiy kafedroy fakul'tetskoy khirurgii Dagestanskogo
meditsinskogo instituta. (LUNGS—HYDATIDS)

ASKERKhanov, H.P., zasluzhennyy deyatel' nauki Dagestanskoj Avtonomnoy
SSR (Makhachkala)

"Acute abdomen" in atypical forms of acute infections. Sov.med. 25
no.6:121-123 Je '61. (MIRA 15:1)
(ABDOMEN...DISEASES)

ASKERKHANOV, R. P. (Makhachkala, ul. Sovetskaya, d. 9, kv. 8)

Primary sarcoma of the lung in a child. Grud. khir. 4 no. 3:96-98
My-Je '62. (MIRA 15:7)

1. Iz kliniki fakul'tetskoy khirurgii (zav. - prof. R. A.
Askerkhanov) Dagestanskogo meditsinskogo instituta.

(LUNGS—CANCER)

ASKERKhanov, R.P. (Makhachkala, Sovetskaya ul., d.9,kv.8)

Case of anomalous development of the left lung. Grud.
khir. 4 no.6:90-92 N-D'62. (MIRA 16:10)
(LUNGS--CYSTS) (LUNGS--SURGERY)

ASKERKhanov, R.P., prof.

Pathogenesis and treatment of diastasis recti abdominis.
Sov. Med. 26 no.9:135-140 S '62. (MIRA 17:4)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - sasluzhenyy
deyatel' nauki Dagestanskoy ASSR prof. R.P. Askerkhanov) Dagestan-
skogo meditsinskogo instituta.

ASKERKhanov, R.P., prof.; SHAKHSHAYEV, M.R.I.

Characteristics of the clinical picture and treatment of stab
and incision wounds of the chest. Khirurgia no.1:47-55 '63.
(MIRA 17:5)

1. Iz kliniki fakul'tetskoy khirurgii (zav. - zasluzhennyy
deyatel' nauki Dagestanskoy ASSR prof. R.P. Askerkhanov)
Dagestanskogo meditsinskogo instituta.

ASKERKHANOV, R.P., prof. (Makhachkala)

Characteristics of primary sarcoma of the lungs. Khirurgia 40
no.1:77-81 Ja '64. (MIRA 17:11)

ASKERKHANOV, R.P.

Leiomyoma of the urinary bladder. Urologiya, no.5:51-52 '64.
(MIRA 18:8)

1. Fakul'tetskaya khirurgicheskaya klinika (zav. - prof. R.P. Askerkhanov) Dagestanskogo meditsinskogo instituta, Makhachkala.

USSR/Diseases of Farm Animals. General Problems.

Abstr Jour: Ref Zhur-Diol., No 15, 1958, 69472.

Author : Khudaverdiyev, N.; Askerov, A.; Minasarov, A.
Inst :

Title : The Use of Antibiotics for the Control of Certain
Diseases in Swine.

Orig Pub: Azerbaydzhan sotsyalist kend. teserrufaty. Sots. s.
kh. Azerbaydzhana, 1957, No 9, 42-44.

Abstract: No abstract.

Card : 1/1

ASKEROV, A.

USSR

On: "Soviet Electoral System - World's Most Democratic," Pravda.

Current Digest of the Soviet Press, Vol. 2, No. 5, 1950, page 34. (In  Library)

ASKEROV, A.A.; VASIL'YEV, A.G.; SAFAROV, N.G.; SARKISOV, S.D.

Crookedness of well shafts as a factor preventing drilling to completion. Azerb. ref. Xhoz. 41 no.1:14-16 Ja '62.

(Kyurovdag--Oil well drilling)

(MIRA 16:7)

~~ASKEROV, A.A.~~ kand. veterin. nauk

Prophylactic effectiveness of some antibiotics in chicken cholera.
Ptitsevodstvo 9 no.6:43-44 Je '59. (MIRA 12:10)

1. Azerbaydzhanskiy sel'skokhozyaystvennyy institut.
(Chicken cholera) (Antibiotics)

ASKEROV T. A.

FONCHENKO, G.K., general-mayor meditsinskoy sluzhby; KOVALEV, Ye.I.,
polkovnik meditsinskoy sluzhby; ASKEROV, A.A.

Electrocardioscopic and electrospygmographic study of the functional
state of the cardiovascular system. Voen.-med.zhur. no.10:31-35
0 '59.

(ELECTROCARDIOGRAPHY)

(MIRA 13:3)

ASKEROV, A.A.

Effect of certain antibiotics on the different species of
Pasteurella on farm animals and poultry. Dokl. Akad. Nauk SSSR
15 no.11:1062-1065 '59. (MIRA 13:4)
(Antibiotics) (Pasteurella)

ASKEROV, A. A., CAND MED SCI, "EFFECT OF SYSTEMATIC PHYSICAL TRAINING ^{upon the dynamics of} ON CERTAIN PHYSIOLOGICAL INDICES IN ^{men} MEN OF ADVANCED AGE ^g HAVING DEVIATIONS IN THE CONDITION OF THE CARDIO-VASCULAR SYSTEM." MOSCOW, 1960. (MIN OF HEALTH USSR, CENTRAL INST ^{for the} OF ADVANCED TRAINING OF PHYSICIANS). (KL, 3-61, 230).

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ASKEROV, Ali Aslanovich, kand. med. nauk; KOVALEV, Yefim Ivanovich,
kand. med. nauk; MAKAROV, V.A., red.; BASHMAKOV, G.M., tekhn.
red.

[Medical control of physical exercises for elderly subjects]
Vrachebnyi kontrol' pri zaniatiakh fizicheskimi uprazhneniami
v starshem vozraste. Moskva, Medgiz, 1962. 180 p.

(MIRA 15:12)

(EXERCISE THERAPY)
(AGED--CARE AND HYGIENE)

SAFKIZOV-SERAZINI, I.M., zasl. deyatel' nauki, prof., red.;
ASKEROV, A.A., red.; PRONINA, N.D., tekhn. red.

[Scientific fundamentals of physical exercises for elderly
persons] Nauchnye osnovy primeneniia fizicheskikh uprazhne-
ni li litsami pozhilogo vozrasta. Moskva, Medgiz, 1963. 257 p.
(MIRA 16:7)

(EXERCISE) (AGED--CARE AND HYGIENE)

MOSHKOV, Valentin Nikolayevich, prof.; ASKEROV, A.A., red.;
MIRONOVA, A.M., tekhn. red.

[General principles of exercise therapy] Obshchie osnovy
lechebnoi fizkul'tury. Izd.3., perer. i dop. Moskva,
Medgiz, 1963. 355 p. (MIRA 16:7)
(EXERCISE THERAPY)

KRYACHKO, I.A., dots., otv. red.; MOSHKOV, V.N., prof., red.;
LETUNOV, S.P., prof., red.; IONINA, A.V., dots., red.;
MOTYLYANSKAYA, R.Ye., kand. med. nauk, red.;
KUKOLEVSKIY, G.M., red.; KHITRIK, I.I., kand. med.nauk,
red.; ASKEBOV, A.A., kand. med.nauk, red.; LYUDKOVSKAYA,
N.I., tekhn. red.

[Physical culture and health] Fizicheskaya kul'tura i
zdorov'ye; trudy. Moskva, Medgiz, 1963. 375 p.

(MIRA 16:7)

1. Vsesoyuznaya nauchno-prakticheskaya konferentsiya po
vrachebnomu kontrolyu i lechebnoy fizicheskoy kul'ture.
Moscow, 1961. 2. Tsentral'nyy nauchno-issledovatel'skiy
institut fizicheskoy kul'tury (for Letunov, Motylyanskaya).
3. Laboratoriya meditsinskogo kontrolya Gosudarstvennogo
tsentral'nogo ordena Lenina instituta fizicheskoy kul'-
tury (for Kukolevskiy). 4. Chlen-korrespondent AMN SSSR i
Tsentral'nyy institut usovershenstvovaniya vrachey (for
Moshkov). 5. Tsentral'nyy institut kurortologii i fizio-
terapii (for Khitrik).

(SPORTS MEDICINE--CONGRESSES)

ASKEROV, A.A., kand.med.nauk; KOVALEV, Ye.I., kand.med.nauk

Medical supervision of physical exercises performed by elderly
persons and the role of a nurse. Med. sestra 22.no.4:15-20 Ap'63.
(MIRA 16:7)

(EXERCISE)

ASKEROV, A.

Effect of cortisone on the resistance of chicks and mice in an
experimental cholera infection. Izv. AN Azerb. SSR. Ser. biol.
no.4:107-110 '64. (MIRA 17:12)

MOSHKOV, V.N., prof.; ASKEROV, A.A., kand. med. nauk (Moskva)

Plenum on medical inspection and exercise therapy. Khirurgiia 39
no.11:148-150 N '63. (MIRA 7:11)

1. Chlen-korrespondent AMN SSSR (for Moshkov).

ASKEROV, A.A., dot sent

Use of ether preparations in veterinary disinfection, Veterinariia
42 no.7:90-92 J1 '65. (MIRA 18:9)

1. Azerbaydzhanskiy sel'skokhozyaystvennyy institut.

FARZALIYEV, M.M., prof.; FYUBOV, I.G., kand. veter. nauk; ALIYEV, A.G.,
Zasluzhennyy veterinarnyy vrach AgSPR

Alimentary anemia in leads. Veterinariia 21 no.7-70-71
JI '64. (MIRA 18-13)

1. Azerbaydzhaanskyy nauchno-issledovatel'skiy veterinarnyy
institut.

ASKEROV, A.

Askerov, A. - "The Yeli-su thermal springs of Kalkhskiy Rayon", Trudy Azerbaydzh. gos. un-ta im. Kirova, Biol. seriya, Vol. III, Issue 3, 1948, p. 63-69, - Bibliog: 12 items.

SO: U -3042, 11 March, 1953, (Izopis 'nykh Statey, No. 10, 1949).

ASKEROV, A. [G.]

"Mineral Springs of Azerbaydzhan SSR." Thesis for degree of Dr. Geological-Mineralogical Sci. Sub 28 Apr 49, Moscow Order of Lenin State U ineni M. V. Lomonosov.

SO: MLRA Summary 82, 18 Dec 52, Dissertations Presented For Degrees in Science and Engineering in Moscow in 1949. From Vechernyaya Moskva, Jan-Dec 1949.

ASKEROV, A. G.

Hydrogeological conditions of formation of the Shirak mineral waters. A. G. AskeroV. *Doklady Akad. Nauk Azerbald. S.R.* 9, No. 1, 21-6 (1953). *Referat. Zhur. t Khim.* 5, No. 8361.—The mineral water is satd. with CO₂, which comprises 79-100% of the total gas vol. This water is essentially of metamorphic origin, which indicates the intrusion of magma into sedimentary carbonate deposits. Atm. water filtering through the overlying layers contributes some of the CO₂. Some analyses of the water are quoted. M. H.

ASKEROV, A.

"Origin of the Formation of the Nagadzhirskiy Mineral Sources."
Tr. Azerb. un-ta, No 2, pp 95-105, 1954

The author considers the origin of the carbonate-saline-alkaline sources of the central part of Nakhichevanskaya ASSR. The water of these sources is used for stomach and digestive diseases. The formation of these sources was influenced by; (a) the lithological composition of these rocks of the region; (b) tectonic processes; (c) the intrusion of magma; (d) atmospheric precipitation and the infiltration process connected with it. The author does not give an analysis of the chemical composition of the water of the sources. (RZhGeol, No 2, 1955)

SO: Sum, No 606, 5 Aug 55

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 6,
p 78 (USSR) 14-57-6-12238

AUTHOR: Askerov, A. G.

TITLE: Hydrogeochemical Districts of the Azerbaidzhan SSR
(Gidrogeokhimicheskoye rayonirovaniye Azerbaydzhanskoy
SSR)

PERIODICAL: Tr. Azerb. un-ta, 1955, Nr 2, pp 65-86

ABSTRACT: In describing geomorphological and hydrogeological features of the area, the author divides Azerbaidzhan into nine hydrogeochemical districts. 1) In the Lenkoran district the waters are of the chloride-calcium-sodium type (30 percent Ca). All springs contain H₂S (from 2 to 12 mg/l); the southern group also contains nitrogen, the northern--hydrocarbons. 2) In the Apsheron-Babazanan district the waters are of the hydrogen-sulfide-methanate-sodium-chloride type (12 percent Ca). Gas and oil deposits are found here.

Card 1/2

Hydrogeochemical Districts (Cont.)

14-57-6-12238

3) In the Khisino-Khudat district the springs have a low mineral content; most of them contain H_2S and sulfates. 4) In the Belokany-Khaltan district the springs are of the nitrogen-bicarbonate type, with a very insignificant amount of H_2S and hydrocarbons. 5) The Kura-Araks district has three types of water: a) fresh, containing bicarbonates of calcium and sodium; b) those with sodium sulfate, and c) those with sodium chloride passing into calcium chloride. 6) In the Karabash district there are magnesium springs (up to 66 percent of all cations) containing CO_2 and Fe. 7) The Kedabek district has carbonate springs of the "Karlsbad" type (carbonic acid gas, high temperature and radioactive properties). 8) 9) The Nakhichevan' district has carbonic acid springs.

Card 2/2

G. B.

~~ASIEROV, A. G.~~

Genesis of the Istisu mineral springs. Uch. zap. AGU no. 5:35-40
'55. (MLRA 9:12)

(Istisu--Mineral waters)

ASKEROV, A. G.

15-57-7-9972

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7,
p 179 (USSR)

AUTHOR: Askerov, A. G.

TITLE: Possibility of Exploiting Darydagskiye Mineral Waters
(Perspektivy ispol'zovaniya mineral'nykh vod Dary-
dagskogo mestorozhdeniya)

PERIODICAL: Uch. zap. Azerb. un-ta, 1956, Nr 3, pp 27-39

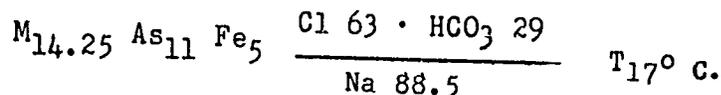
ABSTRACT: The Darydagskiye mineral springs are located 8 km north
of Dzhul'fa in the valley of the Shorsudere reka
(River), which is fed for the most part by mineral
springs. The springs are of the carbonic acid-arsenic-
ferrous chloride-hydrocarbonate-sodium type. Seventeen
springs are described. The majority are of a gushing
type; their flow is accompanied by separation of a
large amount of CO₂. The rate of flow ranges from
1600 to 150 000 liters per day. The temperature ranges

Card 1/3

Possibility of Exploiting Darydagskiye (Cont.)

15-57-7-9972

from 17° to 25° C; a temperature of 20° to 21° C predominates. Travertine deposits of flaky and nodular structure are observed in the areas of the springs. The total flow of water is 222 700 liters per day. All of the springs are associated with overthrusts. The water contains As in an amount of about 10.8 mg/liter; in addition, Fe⁺⁺, Li⁺⁺, B, and other components are present. The chemical composition of the waters may be defined by Kurlov's formulas:



The author calls the waters of the Darydagskiye deposit -- metamorphosed mineral waters; he believes that many factors (lithologic, magmatic, and seepage) acted in the formation of the chemical composition of the waters. The CO₂ in the waters was separated from the carbonate rock at a high temperature in connection with the
Card 2/3

Possibility of Exploiting Darydagskiye (Cont.)

15-57-7-9972

processes of metamorphism. The area is suitable for a health resort with baths and a bottling plant.

Card 3/3

V. S. Kovalevskiy

ASKEROV, A.G.

Thermal springs of the Lesser Caucasus. Uch.zap. AGU no.6:29-49
'56. (MLRA 10:5)
(Caucasus- -Springs)

ASKEROV, A.G.

Problem of the use of Kizil-Vank mineral waters. Uch.zap.AGU
no.12:13-22 '57. (MIRA 12:1)
(Kizil-Vank (Nakhichevan A.S.S.R.)--Mineral waters)

ASKEROV, A.G., prof.

Characteristics of the geology and hydrogeology of the Naftalan
deposit. Sbor.trud.Azerb.nauch.--issl:inst.kur.i fiz.metod.lech.
no.3:15-22 '59. (MIRA 16:4)
(NAFTALAN--GEOLOGY) (NAFTALAN--WATER SUPPLY)

ASKEROV, A.G., red.; GUSEYNOV, A.G., red.; GUSEYNOV, M.M., red.;
BABAYEV, A.M., red.; YEGIAZAROV, A.G., red.

[Study and utilization of mineral water resources in the
Azerbaijan S.S.R.] Izuchenie i osvoenie gidromineral'nykh
resursov Azerbaidzhanskoj SSR; trudy. Baku, AN Azerb.SSR,
1962. 157 p. (MIP: 16:12)

1. Azerbaidzhanskaya respublikanskaya gidrologicheskaya
nauchnaya sessiya, posvyashchennaya 40-i godovshchine
Kopartii Azerbaidzhana i pobedy Sovetskoy vlasti v
Azerbaidzhane. 1st. 1960. 2. Nachal'nik Azerbaidzhanskogo
Respublikanskogo kurortnogo upravleniya profsoyuzov (for
Guseynov, M.M.). 3. Institut kurortologii i fizicheskikh
metodov lecheniya im. S.M.Kirova (for Guseynov, A.G.).
(Azerbaijan—Mineral waters)

AVANESOVA, A.M., kand.tekhn.nauk; KARPENKO, M.M., kand.tekhn.nauk;
PROTASOV, G.N., kand.tekhn.nauk; ASKEROV, A.G., inzh.; MARKAROVA,
T.A., inzh.; SAVEL'YEVA, T.A., inzh.; DASHDAMIROV, F.A., inzh.;
TARIVERDIYEV, D.A., inzh.

Sinking the N 80 deep exploratory well in the Pirsagat sector.
Trudy AgNII DN no.5:78-100 '57. (MIRA 12:4)
(Pirsagat region--Boring)

ASKEROV, A.G.

Formation of the chemical composition of mineral waters. Uch. zap.
AGU. Ser. geol. - geog. nauk no.3:51-62 '63. (MIRA 17:11)

ASHUROV, A.G., Cond Tech Sci---(disc) "Study of the performance of
turbo-drills and chisels in ultra-deep drilling." Baku, 1958. 12 pp
(Min of Higher Education USSR. Azerbajzhan Order of Labor Red Banner
Industrial Inst in ^{M.} ~~A.~~ Azisbekov), 100 copies (ML, 25-58, 111)

- 72 -

YADJILAYEV, N.N.; SHARUTIN, A.S.; ASKEROV, A.G.

Relation between the working capacity of a turbodrill and the degree
of wear of its replaceable parts. Azerb. neft. khos. 37 no.1:12-15
Ja '58. (MIRA 11:6)

(Turbodrills)

ASKEROV, A.G.

Setting up the efficient operation of turbodrills in extradeep-
well sinking. Azerb. neft. khoz. 37 no.9:13-16 Mr '58.
(Boring) (MIRA 11:8)

ASKEROV, A.G.; YAMULLAYOV, N.W.

Changes in the performance of turbodrills. Azerb. Prof. Mon. 38
no. 1:1-16 Ap '59. (MIRA 12:7)

(Turbo Drills)

YADULLAYEV, N.N.; ASKEROV, A.G.

Indicator of the drilling capacity of bits. Azerb.neft.khoz. 38
no.12:16-17 D'59. (MIRA 13:10)

(Boring machinery)

YADULLAYEV, N.N.; ASKEROV, A.G.; GRISHINA, V.P.; SHARUTIN, A.S.

Efficient performance time of bits on well bottoms. Trudy
AENII DN no.9:135-149 '60. (MIRA 14:5)
(Boring machinery)

DZHALIL-ZADE, G.N.; ASKEROV, A.G.; RAGIMOV, A.I.; NADZHAFOV, N. I.;
DZHABAROVA, N.M.

Effect of depth on technical and economic indices of test well
drilling. Trudy AzNII DN no.9:194-202 '60. (MIRA 14:5)
(Azerbaijan--Oil well drilling)

PROFASOV, G.N.; BABAL , N.B.; ASKEROV, A.G.

Effect of process factors on the quality of oil well cementing.
Trudy AzNII DN no.10:305-316 '60. (MIRA 14:4)
(Oil well cementing)

DZHALIL-ZADE, G.N.; MOVSUMOV, A.A.; ASKEROV, A.G.

Rotation of a turbodrill in oil well drilling. Azerb. neft.
khoz. 39 no.3(405):11-13 Mr '60. (MIRA 14:9)
(Oil well drilling) (Turbodrills)

RUSTAMBEKOV, A.F.; KASUM-ZADE, D.S.; YADJLLAYEV, N.N.; ASKEROV, A.G.;
SHERSTNEV, N.M.

Practices in drilling wells of a simplified structure under
complex geological conditions in the Kyanizadag area. Azerb.
neft. khoz. 42 no.1:16-18 Ja '63. (MIRA 16:10)

(Azerbaijan—Oil well drilling)

ASKEROV, A.G.; BABAYEV, A.O.; MUSAYEVA, R.A.

Sinking wells of small and reduced diameter in the Dashgil' area. Sbor. nauch.-tekh. inform. Azerb. inst. nauch.-tekh. inform. Ser. Neft. prom. no.4:3-11 '63. (MIRA 18:9)

YADULLAYEV, N.N.; ASKEROV, A.G.; GRISHINA, V.P.

Determining the optimum duration of drilling cycles. Sbor. nauch.-
tekh. inform. Azerb. inst. nauch.-tekh. inform. Ser. Neft. prom.
no.4:11-14 '63. (MIRA 18:9)

SHERSTNEV, N.M.; ASKEROV, A.G.; RAGIMOV, N.A.

Water permeability of clay coatings. Sbor. nauchl.-tekh. inform.
Azerb. inst. nauch.-tekh. inform. Ser. Neft. prom. no.6:86-94 '63.
(MIRA 18:9)

ASKEROV, A.G.; SEID-RZA, M.K.; BABAYEV, N.B.

Combating circulation losses by controlling hydrostatic pressures
in wells. Sbor. nauch.-tekh. inform. Azerb. inst. nauch.-tekh.
inform. Ser. Neft. prom. no.6:41-44 '63. (MIRA 18:9)

SADYKH-ZADE, S.I.; ASKEROV, A.K.

Alkylation of xylenes with ethylene in the presence of aluminum
chloride (synthesis of ethylxylenes). Azerb.khim.zhur. no.6:39-
43 '60. (Xylene) (Ethylene) (MIRA 14:8)

ASKEROV, A.K.; SADYKH-ZADE, S.I.; MUSTAFAYEVA, P.R.

Production of vinyl- and -methylvinyltoluenes by the catalytic
dehydrogenation of ethyl- and isopropyltoluenes. Azerb.khim.zhur.
no.6:51-59 '61. (MIRA 15:5)
(Styrene) (Toluene) (Dehydrogenation)

ASHIMOV, M.A.; SHCHEGOL', Sh.S.; SADYKH-ZADE, S.I.; ASKEROV, A.K.;
BUKH, Yu.D.

Using azoyat-A as an emulsifier in the emulsion polymerization
of rubber. Sbor. nauch.-tekh. inform. Azerb. inst. nauch.-tekh.
inform. Ser. Nefteper. i khim. prom. no.2:3-14 '52.

(MIRA 18:9)

L 3324065 IST(u)/EPP(c)/EPP(j) Pe-u/Pr-u RM

ACCESSION NR: AP5005518

8/0318/81/000/005/0031/0038

AUTHOR: Askerov, A. K.; Kamysheva, T. P.; Sadykhzade, S. I.; Ismailzade, I. G.; Mamedov, I. M.

TITLE: The order of orientation in alkylation reactions of toluene by ethylene and propylene in the presence of aluminum chloride

SOURCE: Azerbaydzhanskiy khimicheskiy zhurnal, no. 5, 1954 31-38

TOPIC TAGS: toluene alkylation, alkylation reaction, ethylene, propylene, allyl orientation, olefin addition, alkyltoluene

ABSTRACT: The authors attempted to determine the reasons for the contradictory reports on the isomeric composition of the alkylation products of toluene and to study the effect of temperature, amount of catalyst, molar ratio, the character of the reaction components and the rate of olefin addition on the order of orientation of the alkyl groups on the benzene ring. The alkylates were studied by oxidation with potassium permanganate and nitric acid - which method proved unsuitable for this purpose - and by spectral analysis. It was found that the order of substitution at the benzene ring is not subject to the known rule but depends on the reaction conditions, concentration of the catalyst

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L 3329 61

ACCESSION NR: AP5005618

and the nature of the reaction components. At low temperatures (20-50 C) and low $AlCl_3$ concentrations (2-3% $AlCl_3$ for ethyltoluene), the alkyl groups tended to locate at the o-position; at higher temperatures (80 C) and higher $AlCl_3$ concentrations (10-15%), they added at the n-position. A gradual change from ortho to meta occurred between 50 and 80 C. Further increases in temperature or $AlCl_3$ concentration had no effect on the isomeric composition. The proportion in p-position did not change significantly under these conditions. Increasing the molar ratio (ethylene:toluene) from 0.2 to 1 decreased the amount of orthoisomer and increased that of para; decreasing the rate of addition of the ethylene by 2/3 decreased the ortho and increased the meta orientation. Changes in reaction parameters (except for temperature) had no effect on the isomeric composition of isopropyltoluene. (Under mild alkylating conditions (with ethylene) the usual law of substitution at the benzene ring was observed to some degree. An effect of the nature of the olefin was seen in that, under identical conditions, ethyltoluene contained at most 45% while isopropyltoluene contained 75% meta isomer; this latter tendency might be due to steric hindrance at the o-position. Orig. art. has: 4 tables.

ASSOCIATION: none

SUBMITTED: 00

NO REF SOV: 008

ENCL: 00

OTHER: 004

SUB CODE: 00

Card 2/2

ASKEROV, A.K.; KAMYSHEVA, T.P.; SADYKHZADE, S.I.; ISMAILZADE, I.G.;
MAMEDOV, F.A.; MAMEDOV, I.M.

Order of orientation in the reaction of alkylation of xylene
isomers with ethylene and propylene in the presence of $AlCl_3$.
Azerb. khim. zhur. no.3:44-48 '65. (MIRA 19:1)

1. Institut neftekhimicheskikh protsessov AN AzerSSR.

ASKEROV, A.Yu.; IRMES, M.L.

Index subject: ...

Rare case of focal neurofibromatosis of the sympathetic trunks; from medicolegal practice. Azerb. med. zhur. 42 no.2:66-68 F '65. (MIRA 18-65)

1. Iz byuro sudebnomeditsinskoy ekspertizy Ministerstva zdravookhraneniya Azerbaydzhanskoy SSR (nachal'nik - Yu.N.Semenov).

9.4300 (1035, 1138, 1143)

84091
S/161/60/002/009/034/036
BOGA/BO56

AUTHORS: Ansel'm, A. I., Askerov, B. M.

TITLE: Thermomagnetic Phenomena in Semimetals in a Strong Magnetic Field

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 9, pp. 2310-2321

TEXT: The authors proceed from the theory of the magnetic reluctance of metals such as was developed in consideration of the quantization of electrons in a magnetic field by S. Titeica (Ref. 4) and improved by Davydov and Pomeranchuk (Ref. 5), and M. I. Klinger and P. I. Voronyuk (Ref. 6). The authors' aim was to investigate the action of the quantization of conduction electrons in a magnetic field upon the thermomagnetic properties in the presence of a temperature gradient. First, the steady states of the electron in crossed magnetic and electric fields are investigated. The magnetic field is assumed to be directed along the z-axis, and the electric field along the x-axis. The wave equation (1.3) for the steady state of the electron is written down, and equation (1.7) is obtained for the current density in the direction of the y-axis. There

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Thermomagnetic Phenomena in Semimetals in
a Strong Magnetic Field

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S/181/60/002/009/034/036
B004/B056

follows the calculation of the thermomagnetic coefficient from the kinetic equation (Ref. 2) assuming a magnetic field in the direction of the z-axis, a temperature gradient in the direction of the x-axis, and an electric field with the components E_x and E_y . Assuming the electrons to be scattered by acoustic lattice vibrations, equation (3.11) is derived for the current in the direction of the temperature gradient running along the x-axis. This equation is applied to a metal whose temperature is higher than the Debye temperature. In part 4, the current which is perpendicular to the temperature gradient and not connected with electron scattering is dealt with. Finally, there follows an investigation of the thermomagnetic effect in the quantum limit. The authors state that their illustrative representation may probably be made more precise by applying the equation of motion of the density matrix. In the quantum-theoretical treatment of the galvanomagnetic and thermomagnetic effects, the difference between metal and semimetal vanishes in a certain sense. The equation (5.14) obtained by the authors for the Nernst coefficient is therefore applicable both for semimetals and metals. However, magnetic fields of the order of 10^9 oersted are necessary for the realization of the quantum

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Thermomagnetic Phenomena in Semimetals in
a Strong Magnetic Field

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B004/B056

limit in metals. The authors mention papers by L. Landau (Ref. 1) and G. Ye. Zil'berman. They thank G. Ye. Pikus, R. Ya. Moyzhes, and Yu. N. Obraztsov for discussions. There are 12 references: 3 Soviet, 3 US, 2 Dutch, 1 French, 1 German, and 1 Japanese.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors of the AS USSR, Leningrad). Institut fiziki AN AzSSR, Baku (Institute of Physics of the AS Azerbaydzhanskaya SSR, Baku)

SUBMITTED: March 5, 1960

Card 3/3

S/181/60/002/011/023/042
B006/B056

AUTHORS: Ansel'm, A. I. and Askerov, R. M.
TITLE: The Chemical Potential and the Criterion for the Degeneracy
of Conduction Electrons in a Strong Magnetic Field
PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 11, pp. 2821-2826

TEXT: The authors calculated the chemical potential of conduction electrons in a magnetic field in quantum limit, taking account of the electron spin. On this occasion, the case was considered in which the electrons are in a degenerate, a non-degenerate, and in an intermediate state. This makes it possible to find the range of application of electron quantization in the so-called quantum limit (all magnetic oscillators are in the non-excited ground state, $n = 0$; low temperatures and high magnetic field strength for $kT \ll \mu H$; $\mu =$ Bohr magneton) and furnishes the criterion for electron degeneracy in quantum limit. In all cases under consideration, implicit equations are given for determining the chemical potential ξ . In the general case, an impurity of monovalent donor ions is taken as an example, whose electrons are in the s-state. In the magnetic field, the ground level

Card 1/3

The Chemical Potential and the Criterion
for the Degeneracy of Conduction Electrons
in a Strong Magnetic Field

S/31/60/002/011/023/042
BC06/B056

$(-\varepsilon_d)$ of the electrons in the local center is split into two sublevels
 $(-\varepsilon_d \pm \mu_0 H)$. For the electron concentration, the relation

$N = N_d / \left[1 + 2 \exp\left(\frac{\xi + \varepsilon_d}{kT}\right) \operatorname{ch}(\mu_0 H / kT) \right]$ is obtained, where N_d is the concentration

of impurity atoms, from which ξ may be calculated. This equation was numeri-
cally solved together with another one for N , and the results are shown in
Figs. 2 and 3 (for $T = 30^\circ, 40^\circ, \text{ and } 50^\circ \text{K}$). From Fig. 2, which shows

$\xi^* = \xi / kT$ as a function of H , it may be seen that ξ^* grows linearly with
an increase of H , and that all the more quickly, the lower the temperature.
Fig. 3 shows $N(H)$; the electron concentration decreases with an increase
of H , the curves for the various temperatures taking almost a parallel
course; they are the lower, the lower the temperature. Yu. N. Obraztsov,
M. I. Klinger, and G. Ye. Pikus are thanked for discussions. There are
3 figures and 11 references: 6 Soviet, 1 US, 3 German, and 1 Swiss.

Card 2/3

The Chemical Potential and the Criterion
for the Degeneracy of Conduction Electrons
in a Strong Magnetic Field

S/181/60/002/011/023/042
B006/B056

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad
(Institute of Semiconductors of the AS USSR, Leningrad).
Institut fiziki AN Azerb.SSR Baku (Institute of Physics
of the Azerbaydzhanskaya SSR, Baku)

SUBMITTED: July 7, 1960



Card 3/3

32069
S/181/61/003/012/003/028
B102/B'08

24.2200 (1137, 1144, 1164)

AUTHOR: Askerov, B. M.

TITLE: Thermomagnetic effects in degenerate semiconductors and metals in an arbitrary magnetic field

PERIODICAL: Fizika tverdogo tela, v. 3, no. 12, 1961, 3581 - 3583

TEXT: A mathematical description of thermomagnetic effects is given. The calculations are based on the kinetic equations of the main thermomagnetic coefficients. The conduction electrons are assumed to be highly degenerate; the magnetic field be arbitrary, and relaxation time $\tau(\epsilon)$ be an arbitrary function of energy ϵ . The results are

$$Q = \frac{\pi^2 k^2 T}{3mc} \frac{\tau_0}{1 + \mu_H^2 H^2}, \tag{21}$$

$$\alpha(H) = -\frac{\pi^2 k}{3e} \left(\frac{3}{2} \frac{kT}{\tau_0} + \frac{kT}{1 + \mu_H^2 H^2} \frac{\tau_0}{\tau_0} \right), \tag{22}$$

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S/181/61/003/012/003/028
B102/B108

Thermomagnetic effects in ...

$$\Delta\alpha = \frac{\pi^2 k^2 T}{3} \frac{\tau_0}{e} \frac{\mu_H^2 H^2}{1 + \mu_H^2 H^2}, \quad (23)$$

$$\chi(H) = \frac{L\sigma T}{1 + \mu_H^2 H^2}, \quad \Delta\chi = \chi(0) - \chi(H) = L\sigma T \frac{\mu_H^2 H^2}{1 + \mu_H^2 H^2}, \quad (24)$$

$$S = -\mu_H \frac{\chi(H)}{\chi(H) + \chi_\phi}, \quad (25)$$

$\mu_H = \sigma R$ is the hall mobility; $\sigma = e^3 N \tau_0 / m$, $R = -1/e c N$, N - electron concentration, $L = (\pi^2/3)(k/e)^2$ is the Lorentz number; $\tau_0 = \tau(\xi_0)$, $\tau_0 = \frac{d\tau(\xi)}{d\xi} \Big|_{\xi = \xi_0}$, ξ_0 - Fermi-boundary energy; χ - thermal diffusivity, χ_ϕ - its phonon, and $\chi(H)$ - its electron component. Eq. (21) describes the transverse Nernst-Ettingshausen effect, (22) and (23) the longitudinal one. (24) and (25) describe the Rigi-Leduc effect. The corresponding adiabatic effects are

Card 2/3 .

32081

S/181/61/003/012/016/028
B104/B102

24,7600 (1158, 1160, 1164)

AUTHOR: Askerov, B. M.

TITLE: Nernst-Ettingshausen effect in a strong magnetic field with allowance for a mixed scattering mechanism

PERIODICAL: Fizika tverdogo tela, v. 3, no. 12, 1961, 3663 - 3667

TEXT: The isothermal Nernst-Ettingshausen effect in atomic semiconductors in the presence of strong magnetic fields has been studied on the assumption of two scattering mechanisms: scattering by 1) phonons and 2) impurity atoms. Mixed and impurity conductivity were examined. For the case of mixed conduction, the equation

(1. 4),

$$\tau^{\pm} = \frac{3}{2} \frac{m_{\pm}}{e} u_{\pm}^{\pm} \frac{F_1(\zeta^{\pm})}{F_0(\zeta^{\pm})} \frac{x^{\pm 3/4}}{x^{\pm 2} + \eta^{\pm} \gamma_{\pm}^2}$$

where

$$\gamma_{\pm}^2 = \frac{u_{\pm}^{\pm}}{u_{\pm}^{\mp}}; \quad \eta^{\pm} = 3 \frac{F_2(\zeta^{\pm})}{F_0(\zeta^{\pm})}$$

(1. 5), was derived for the

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3021
S/181/61/003/012/016/028
B104/B102

Nernst-Ettingshausen effect ...

effective relaxation time. m_{\pm} is the effective carrier mass, $x = \epsilon/kT$, u_L^{\pm} and u_1^{\pm} are the corresponding mobilities which are destined either by scattering from phonons or by scattering from impurity atoms alone; $F_r^{(*)}$ are Fermi integrals. By substituting this relaxation time in the solution to the equation of motion one obtains

$$\sigma(H) = eu_L^+ n_+ \frac{(1-\nu)^2}{(\Lambda_1' + \frac{\nu}{b} \Lambda_1)}, \quad (1.6),$$

$$R = \frac{1}{ecn_+(1-\nu)},$$

$$Q = \frac{k}{e} \frac{u_L^+}{\sigma} \left(\frac{u_L^+ H}{\sigma} \right)^{-2} \frac{1}{(1-\nu)^2} \left[(\Lambda_1' + \frac{\nu}{b} \Lambda_1) (\Lambda_3' + \nu \Lambda_3) - \right. \quad (1.7), \text{ and}$$

$$\left. - (\Lambda_2' - \frac{\nu}{b} \Lambda_2) (1-\nu) + \frac{\Delta_2}{kT} \nu (\Lambda_1' + \frac{1}{b} \Lambda_1) \right]; \quad \nu \neq 1, \quad (1.8) \text{ for the electrical}$$

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S/181/61/003/012/016/028
B104/B102

Nernst-Ettingshausen effect ...

conductivity, the Hall coefficient, and the Nernst-Ettingshausen effect, respectively. $\nu = n_-/n_+$ and $b = u_L^-/u_L^+$; $\Delta\varepsilon$ is the forbidden band width which is supposed to be temperature-independent. The coefficients Λ_i are expressed by Fermi integrals

$$\left. \begin{aligned} \Lambda_1 &= \frac{4}{9} \frac{F_0(\zeta^*)}{F_{1/2}^2(\zeta^*)} \left[2F_1(\zeta^*) + \frac{\eta \gamma_-^2}{1 + \exp(-\zeta^*)} \right], \\ \Lambda_2 &= \frac{4}{9} \frac{F_0(\zeta^*)}{F_{1/2}^2(\zeta^*)} [3F_2(\zeta^*) + \eta \gamma_-^2 F_0(\zeta^*)], \\ \Lambda_3 &= \frac{5}{3} \frac{F_{1/2}(\zeta^*)}{F_{1/2}(\zeta^*)}. \end{aligned} \right\} (1.9).$$

The formulas indicate that $Q = Q_L + Q_1$ is valid in strong magnetic fields, i. e., the Nernst-Ettingshausen effect is additive. Experiments are usually made at low temperatures in that range in which the conductivity of semiconductors is chiefly determined by impurities. For an n-type

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S/181/61/003/012/016/028
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Nernst-Ettingshausen effect ...

semiconductor it is shown that in the case of strong degeneracy, scattering from phonons plays a significant role even at low temperatures. A. I. Ansel'm and V. I. Klyachkin (ZhETF, 22, 297, 1952) and Yu. N. Obratsov (ZhTF, XXV, 955, 1955) are mentioned. Professor A. I. Ansel'm and Yu. N. Obratsov are thanked for discussions. There are 10 references: 5 Soviet and 5 non-Soviet. The four references to English-language publications read as follows: V. A. Johnson, and W. J. Whitesell, Phys. Rev., 89, 941, 1953; P. P. Debye and F. Convell, Phys. Rev., 92, 693, 1954; R. B. Dingle, Phil. Mag. 46, 831, 1955; A. Beer, J. Armstrong, and J. N. Greenberg, Phys. Rev., 107, 1506, 1957.

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SUBMITTED: July 8, 1961

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S/181/61/003/012/017/028
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24,2200 (1,58, 1160, 1164)

AUTHORS: Ansel'm, A. I., and Askerov, B. M.

TITLE: Thermomagnetic effects in semiconductors in a strong magnetic field in electron scattering from a short-range potential

PERIODICAL: Fizika tverdogo tela, v. 3, no. 12, 1961, 3668 - 3677

TEXT: The authors determine the thermomagnetic coefficients by calculating the heat flux due to electron migration in an electric field with the aid of the Onsager relations. A general expression is given for the energy flux which holds when the electrons are scattered elastically. Furthermore, the thermomagnetic coefficients for short-range scattering potentials are calculated, which are used for determining the galvanomagnetic effects. It is assumed that the electrons are not degenerate and that their concentration is independent of temperature and magnetic field. The problem is studied in a scalar effective-mass approximation. For short-range scattering potentials in the X-ray quantum limit the thermo-emf and the Nernst constant are obtained as functions of the magnetic field and of

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Thermomagnetic effects in ...

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temperature. It was found that the method of calculating the flux in a strong magnetic field with the existence of a temperature gradient in the X-ray quantum limit, which has been suggested by both authors in a previous paper (PTT, 2, 2821, 1960) gives results that are contradictory to the Onsager principle. This is explained by the fact that the non-commutativity of the velocity operator \hat{v} and the energy operator $\hat{\mathcal{H}}$ has to be considered when calculating the heat flux in an external electric field. In the heat flux a peculiar hybridization of the electron states with the mixed magnetic quantum numbers takes place which, in the quasiclassical case, do not exist and do not influence the X-ray quantum limit. The method suggested by the authors is a generalization of the method of S. Titeica (Ann. d. Phys., 22, 128, '935). Since the above circumstances are not considered correct results can be obtained only for the quasiclassical case. L. E. Gurevich and M. I. Kliner are mentioned. There are 12 references: 8 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: Arnold H. Kahn, Phys. Rev., 119, 1189, 1960; W. Kohn, J. M. Luttinger, Phys. Rev., 108, 590, 1957; E. N. Adams, T. D. Holstein, Phys. Chem. Sol., 10, 266, 1959.

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